CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-46

WATER RECLAMATION REQUIREMENTS FOR:

CITY OF LIVERMORE
CALIFORNIA DEPARTMENT OF TRANSPORTATION
AUGUST HAGEMANN

LIVERMORE, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), finds that:

1. The City of Livermore, hereinafter called the producer, submitted a Report of Waste Discharge dated March 26, 1984 for revision of waste discharge requirements for existing uses of reclaimed wastewater from the Livermore Water Reclamation Plant. City of Livermore and August Hagemann (hereinafter called users) presently use reclaimed wastewaters under Board Order No. 71-76 as amended by Order No. 79-68. The California Department of Transportation (CALTRANS, hereinafter also called a user) presently uses reclaimed wastewaters under Order No. 74-71. The Regional Board has previously issued wastewater reclamation requirements for City of Livermore and August Hagemann as contained in Resolutions Nos. 683, 703, 742, and Orders Nos. 67-21, 67-28, 68-19, 68-20, 68-45, and 68-50 which were rescinded by Order No. 71-76.

2. The producer presently provides secondary treatment of an annual average of 4.7 mgd of domestic and industrial wastewaters at its 6.25 mgd (secondary treatment design capacity) Livermore Water Reclamation Plant in accordance with Order No. 84-32. Approximately 85 percent of the producer's flow is exported by the Livermore-Amador Valley Water Management Agency for discharge to Central San Francisco Bay under Order No. 84-30. The remaining 15 percent of the treated effluent (0.6 mgd average in 1983, 3.5 mgd intended maximum) is reclaimed for irrigation of adjacent areas.

3. The treatment plant's 5 mgd reclamation facilities (design capacity) consist of coagulation, filtration and chlorination after secondary treatment by activated sludge and transport to a 1.88 mg reservoir located on Doolan Canyon Road. Reclaimed wastewater is drawn off as needed from the reservoir transmission line by the producer for golf course and landscape irrigation and by CALTRANS for freeway landscape irrigation (See attached Figure 1.) by fixed sprinklers. The producer irrigates 154 acres at the Las Positas Golf Course, 2.5 acres of landscaping at the Livermore Municipal Airport, and 2 acres of landscape at the treatment plant. CALTRANS is constructing a sprinkler distribution system for irrigation of 9 acres of freeway landscape along Interstate 580 under Order No. 74-71 which is also being revised as part of this Order. August Hagemann is an occasional user of reclaimed water directly from the producer's facilities on approximately 30 acres of nearby farm lands for growing food and fodder crops. All irrigation areas are located within the Central Ground Water Basin of the Livermore-Amador Valley as defined in the Board's Basin Plan.

4. The producer has irrigated or supplied reclaimed irrigation waters to large areas, including farmlands, in the vicinity since 1967, but currently only plans to irrigate the golf course, airport and treatment plant areas. The small amount of irrigation on the adjacent Hagemann fodder crop fields will probably terminate in 1985. Future airport expansion and construction may revise the golf course configuration, but the total irrigated area will remain approximately the same. There are also future plans to irrigate the Springtown Golf Course and landscape at the Chabot Junior College campus. This will require further consideration by the Board.

   The producer and CALTRANS have negotiated an agreement for the use of reclaimed water on the State's right-of-way. The agreement provides for the City to furnish water which will meet the prescribed requirements of this Order and submit to this Board the required self-monitoring reports. An agreement between the producer and August Hagemenn has not been submitted.

5. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving the recommendations of the State Department of Health Services, and if it determines such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water. The use of reclaimed water for the purposes specified in Finding 3, could affect the public health, safety or welfare, and requirements for those uses are therefore necessary in accordance with the Water Code.

   This Order's rquirements are in conformance with and implement the wastewater reclamation criteria of the State Department of Health Services (California Administrative Code, Title 22, Division 4, Section 60301 - 60355) to protect the public health, safety and welfare.

6. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The beneficial uses of the Central Ground Water Basin as identified in the Basin Plan are:

   - o Industrial Service and Process Supply
   - o Municipal and Domestic Supply
   - o Agricultural Supply

7. The Basin Plan contains surface and ground water quality objectives for the Alameda Creek Watershed above Niles as follows:

"SURFACE WATER QUALITY OBJECTIVES
(Alameda Creek and Tributaries)

TDS:	250 mg/l 90 day - arithmetic mean
	360 mg/l 90 day - 90th percentile
	500 mg/l daily maximum
CHLORIDES:	60 mg/l 90 day - arithmetic mean
	100 mg/l 90 day - 90th percentile
	250 mg/l daily maximum

GROUND WATER QUALITY OBJECTIVES

(Concentration Not to be Exceeded More than 10% of the Time during One Year)

Central Basin

TDS:	Ambient or 500 mg/l, whichever is lower
Nitrate (NO3):	45 mg/l (equivalent to 10 mg/l of nitrate as nitrogen)

Waters designated for use as domestic or municipal water supply shall not contain concentration of chemicals in excess of natural concentration or the limits specified in California Administrative Code, Title 22, Chapter 15, particularly Tables 2, 3, 6 and 7."

Ambient water quality conditions at the existing Livermore water reclamation areas have been determined by Zone 7 of the Alameda County Flood Control and Water Conservation District (the watershed manager) based upon a March 1983 study performed by the U.S. Geological Study (U.S.G.S.) titled "Land Application of Wastewater and Its Effects on Groundwater Quality in the Livermore-Amador Valley, Alameda County, California", as follows:

	Livermore Application Area	
	Upper Aquifer	Lower Aquifer
Total Dissolved Solids (mg/l)		
Minimum	695	453
Median	810	544
Maximum	996	633

8. The March 1983 USGS study concluded that wastewater applications appear to have affected the water quality of the upper and lower aquifers in the Livermore wastewater application areas including the Las Positas Golf Course and the Livermore Municipal Airport. The study found that a) dissolved nitrates as nitrogen in the Livermore application areas were greater than in most wells not receiving wastewater applications and several of the median levels in the Livermore wells exceed the State Department of Health Services' 10 mg/l maximum contaminant level for nitrate as nitrogen in drinking water, and b) values of specific conductance, pH, dissolved solids and dissolved chloride were very similar to those characteristics in Livermore effluent.

9. The producer does not agree with the USGS study findings. The producer performed its own study on this matter titled "Issues and Options -- Wastewater Reclamation in the City of Livermore, California" (Aqua Resources, Inc., November 1984) found that use of Zone water supply in irrigation would meet ground water objectives but that use of present reclaimed wastewater or local ground waters would not meet objectives. The study further concluded that fertilizer appliications and existing soil-chemical conditions complicated the determination of severity of ground water impacts.

10. The producer's self-monitoring reports from 1983 and 1984 indicate that heaviest reclaimed wastewater use typically occurs from April through October. There is adequate capacity in the LAVWMA export facility to dispose of the treated effluent during the April to October time frame.

11. The Basin Plan states the Board's intent to use Zone 7's policies for community wastewater systems as guidance in developing waste discharge requirements for dischargers in the Livermore-Amador Valley. The Board adopted Zone 7's policies into the Basin Plan after extensive public hearings on both the Zone's wastewater management plan and the Board's Basin Plan. The applicable Zone 7 and Basin Plan policies are:

"a. The General Policy:

...

The quality of ground water in the Central Ground Water Basin should not be allowed to be degraded by controllable factors. All wastewater treatment and disposal facilities shall be planned, located, scheduled for construction, and operated so as to maximize the export of salt, and to minimize salt and other pollutant loadings in the Central Basin.

...

b. Community Wastewater Systems:

...

A1. To the extent possible and reasonable wastewater should be treated and disposed through the existing systems with export of effluent.

...

A.3. If additional export is not feasible, limited land application may be an alternative. Land application will be considered only after a feasibility study by Zone 7, or another entity, finds export not feasible.

However, wastewater treatment (which may include demineralization) with land application may be permitted if one of the following conditions is met:

a) The percolate (at the ground water table) meets the ground water quality objectives and does not cause poor quality rising ground water to violate any water quality objectives.

b) The applied wasterwater effluent has less than 250 mg/l TDS, does not cause any significant local problems, and does not cause rising ground water to create water quality problems in the Central Basin and Niles Cone areas.

c) The application point is in the fringe subbasin or upland and highland ara, and it can be shown that the project, because of its size and location, together with other possible projects in the area, will not cause adverse water quality effects either locally or in the Central Basin or Niles Cone areas. The site specific study will have to demonstrate that the percolate cannot rasonable be expected over time to move, either directly or indirectly, into the Central Basin or Niles Cone and degrade or pollute the ground water. All other State and Federal standards must be met.

Policies b and c above allow some degradation only when beneficial reuse of wastewater is proposed, as permitted in the State nondegradation policy. Land application will be discouraged in the Central Basin where salts, trace organics, and viruses may cause problems."

12. While the above policies address primarily new developments, the Board considers them applicable to the discharge because of the discharge location and the findings in Zone 7's USGS study on land application of wastewater. No information has been submitted at this time regarding the incidence of rising groundwater in the area.

13. These waste discharge requirements revise the existing reclamation requirements in conformance with current state and local policies for protection of surface and ground waters. These projects are considered a minor alteration to land and as such are exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15104, Chapter 3, Title 14, California Administrative Code.

14. This Regional Board has notified the dischargers and interested agencies and persons of its intent to amend water reclamation requirements for the proposed uses.

15. This Board at a public meeting heard and considered all comments pertaining to this reuse.

IT IS HEREBY ORDERED, that the City of Livermore, August Hagemann, and California Department of Transportation, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Reclaimed Wastewater Use Specifications:

1. The treatment, distribution or reuse of reclaimed wastewater shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.

2. Reclaimed wastewater shall be used only to irrigate the facilities as described in Finding 3 and as also shown on Attachment 1.

3. The reclaimed water for use on fodder crop and landscape irrigation shall be at all times an adequately disinfected, oxidized water and shall meet the following quality limits at all times:

a.	5-day BOD	30 mg/l, 30 day average 60 mg/l maximum
b.	Dissolved Oxygen	1.0 mg/l minimum
c.	Dissolved Sulfide	0.1 mg/l maximum

d.	Coliform Organisms	Median MPN shall not exceed twenty-three (23) coliform organisms per 100 milliliters of sample or 240 MPN/100ml for any two consecutive samples at some point in the treatment process. The median value will be determined from the bacteriological results of the last seven (7) analyses.
e.	Suspended Solids	30 mg/l, 30 day average 60 mg/l maximum
f.	Total Dissolved Solids	250 mg/l maximum

4. The reclaimed water used to irrigate a food crop which will undergo extensive commercial, physical, or chemical processing sufficient to destroy pathogenic agents as determined by the State Department of Health Services shall meet the effluent limits in A.3 above and in addition shall be disinfected to meet the following more stringent coliform effluent limitations:

   Coliform--Median MPN shall not exceed 2.2 coliform organisms per 100 ml of sample as determined from the bacteriological results of the last seven (7) analyses.

5. The reclaimed water used to spray irrigate a food crop which will not undergo extensive processing as in A.4 shall meet the effluent limits in A.3 and in addition shall be coagulated, clarified, filtered, and disinfected to meet the following more stringent turbidity and coliform limitations:

   Turbidity -- Does not exceed an average operating turbidity of 2 turbidity units and does not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period.

   Coliform -- Median MPN shall not exceed 2.2 coliform organisms per 100 ml of sample as determined from the bacteriological results of the last seven (7) analyses, nor exceed 23 coliform per 100 ml of sample in more than one sample within the last 30 analyses.

6. The Board may revise or add to these specifications at a later time to assure attainment and/or maintenance of Basin Plan groundwater and/or surface water objectives.

B. Reclaimed Wastewater Use Limitations:

1. No reclaimed wastewater used for irrigation shall be allowed to escape to areas outside the disposal areas, either by surface flow or airborne spray.

2. The use of reclaimed wastewater shall not cause degradation of groundwaters of the Central Ground Water Basin of the Livermore - Amador Valley suitable for domestic use nor cause ground waters to exceed the following specific water quality objectives more than 10% of the time during one year:

Constituent	Maximum Concentration
Total Dissolved Solids	500 mg/l
Nitrate as Nitrogen	10 mg/l

Where the groundwaters exceed the above concentrations due to natural causes, the producer and users shall not cause further degradation.

3. The use of reclaimed wastewater in golf course ponds shall be determined as part of the mitigation plan required in C.2. below.

4. The use of reclaimed wastewater shall not cause rising groundwaters discharging to surface waters to impair surface water quality objectives or beneficial uses.

5. Reclaimed wastewater shall be applied to use areas in a manner which will minimize public contact with or exposure to the wastewater in compliance with the California State Departmen of Health Services "Guidelines for Use of Reclaimed Water Irrigation and Impoundments."

6. Areas irrigated, including golf course ponds, and all equipment used in connection with reclaimed wastewater use shall be clearly identified with posted notices to the public and managed in conformance with the California State Department of Health Services "Guidelines for Use of Reclaimed Water Irrigation and Impoundments" and "Guidelines for Worker Protection at Water Reclamation Use Areas".

7. No reclaimed wastewater shall be applied to the use areas during periods of rainfall or when soils are saturated.

8. If an effluent or use requirement is violated, the producer or user shall immediately terminate discharge to the irrigation area until such violation is corrected and measures are implemented to assure it not reoccuring.

9. CALTRANS (user) shall notify the producer (City of Livermore) within 30 days of the need for reclaimed wastewater prior to initial irrigation on a new area allowed by these requirements.

10. Prior to each growing season and at least 60 days in advance of using reclaimed wastewater on food, fodder, fiber, or seed crops, the user (August Hagemann) shall submit to the Board for approval by the Executive Officer and to the producer (City of Livermore), plans for use of reclaimed wastewater including the types and acreages of crops, the method of irrigation, and a map showing the irrigated area locations.

11. No reclaimed water shall be applied on any area not specified for such use in Finding 3 above until the discharger has submitted plans and has received written approval from the Executive Officer. The Executive Officer will consider the review, comments, and approval of the plans by Zone 7 of the Alameda County Flood Control and Water Conservation District.

C. Provisions

1. The requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 71-76, 74-71, and 79-68. Order Nos. 71-76, 74-71 and 79-68 are hereby rescinded.

2. With the exception of Reclaimed Wastewater Use Specification A.3.f. the producer and users shall comply with all requirements of this Order immediately upon adoption. Compliance by the producer with Reclaimed Wastewater Use Specification A.3.f. shall be according to the following time schedule:

Task	Completion Date	Report of Compliance Due
Submit Status Report on Mitigation Plan	June 1, 1985	June 15, 1985
Submit Mitigation Plan	September 1, 1985	September 15, 1985
Submit Status Report on Implementation of Mitigation Plan	March 1, 1986	March 15, 1986
Full Compliance	September 1, 1986	September 15, 1986

The producer shall submit to the Board, on or before each compliance report date, a report detailing the producer's compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the producer will be in compliance. The producer shall notify the Board by letter when the producer has returned to compliance with the time schedule.

Upon receipt of the mitigation plan the Executive Officer will review and present the plan to the Board for consideration and approval. If the producer achieves full compliance with the Board-approved mitigation plan by the date specified above, an exception to Reclaimed Wastewater Use Specification A.3.f. and other necessary specifications will be granted to the producer. If full compliance with the Board-approved mitigation plan is not achieved, all Reclaimed Wastewater Use Specifications and Limitations shall be achieved by the full compliance date shown above.

3. Within 90 days the producer shall submit to this office a report, satisfactory to the Executive Officer, describing the irrigation system, and a maintenance and operations plan to meet these requirements. The plan shall emphasize the CSDHS Guidelines (attached).

4. The producer and users shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer. The producer and users shall file with the Regional Board technical reports on self-monitoring work performed according to detailed specifications as directed by the Executive Officer.

5. The producer shall comply with Standard Provisions Nos. 2, 4, 5, 6, 7, 8, 11, 13, 14, 15, 16 and 17; and all Reporting Requirements and Definitions of the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977.

6. The producer and users shall maintain in good working order and operate, as efficiently as possible, any facility or control system to achieve compliance with these requirements.

7. The producer and users shall permit the Regional Board or its authorized representative in accordance with California Water Code Section 13267(c):

   a. Entry upon premises in which an effluent source is located or in which any required records are kept.

   b. Access to copy any records required to be kept under terms and conditions of this Order.

   c. Inspection of any monitoring equipment or method required by this Order.

   d. Sampling of any discharge or reclaimed water.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on April 30, 1985.

ROGER B. JAMES
Executive Officer

Attachments:

Figure 1 - Map of Irrigation Areas for Reclaimed Wastewater Use
Self-Monitoring Program
Standard Provisions, Reporting Requirements and Definitions - April 1977.
CSDHS - Guidelines for Use of Reclaimed Water
for Irrigation and Impoundments.
Guidelines for Worker Protection at Water Reclamation Use Areas.

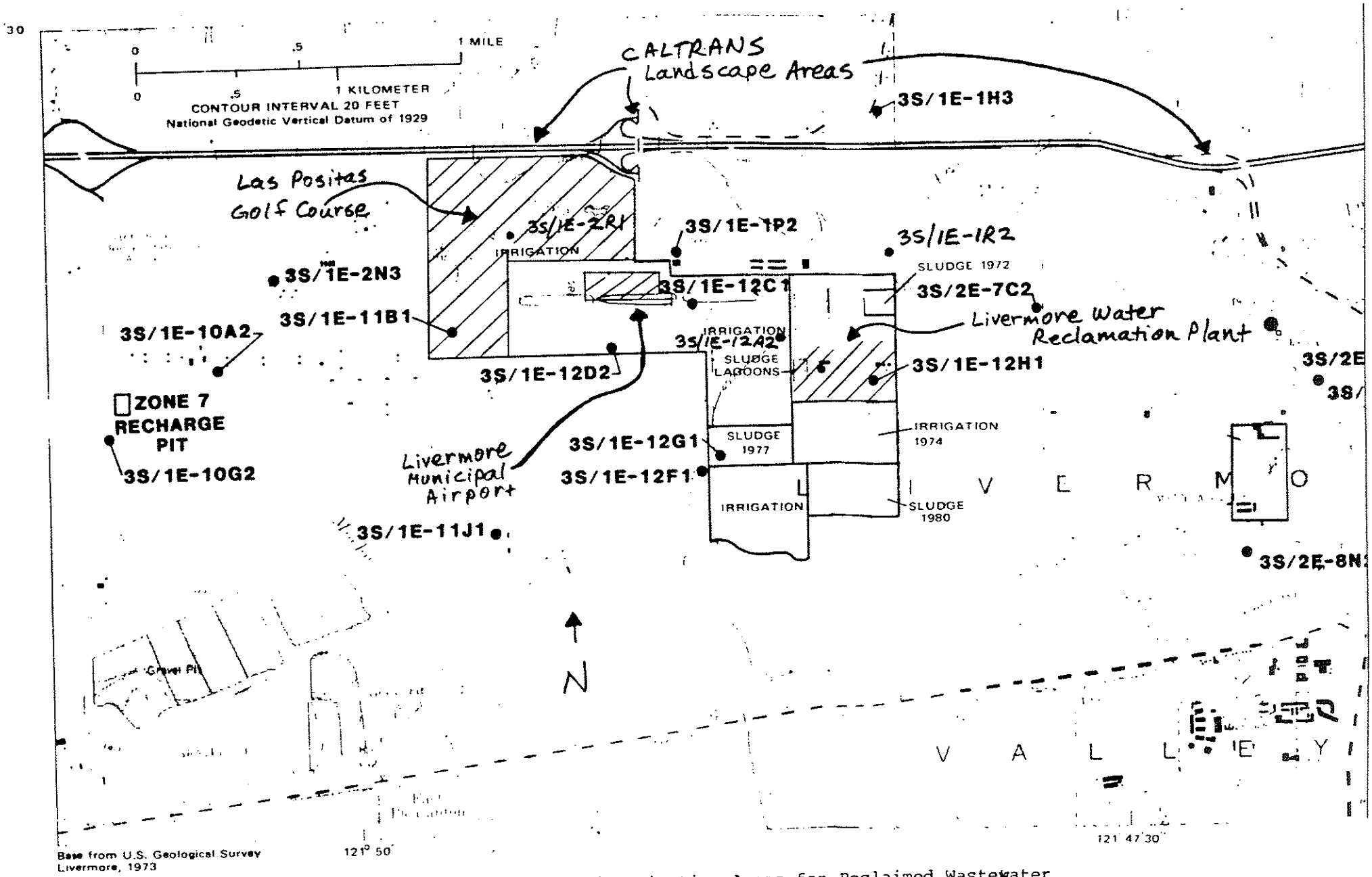

FIGURE 1 - Map of Irrigation Areas for Reclaimed Wastewater Use and Locations of Groundwater Monitoring Wells

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

R E V I S E D

SELF-MONITORING PROGRAM
FOR

CITY OF LIVERMORE

LIVERMORE WATER RECLAMATION PLANT,

STATE DEPARTMENT OF TRANSPORTATION,

AND AUGUST HAGEMANN

WASTEWATER RECLAMATION REQUIREMENTS

ORDER NO. 85-46

CONSISTING OF

PART A, Dated January 1978

AND

PART B, adopted April 30, 1985

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. EFFLUENT - RECLAIMED WASTEWATER

Station	Description
E-1R	At a point in the disinfection facilities of the City of Livermore, Water Reclamation Plant, for the treated effluent at which point adequate disinfection is assured prior to its use on a landscape area.

B. GROUND WATERS

Station	Description
G-1	Background monitoring well-upgradient. (State well 3S/1E - 1H3, well depth 80 ft.)
G-2	Las Positas Golf Course monitoring well - within irrigated area. (State Well 3S/1E - 2R1, perforation depth 21-26 ft.)
G-3	Las Positas Golf Course monitoring well - within irrigated area. (State Well 3S/1E - 11B1, perforation depth 33-38 ft.)
G-4	Background monitoring well - upgradient of WRP. (State Well 3S/2E - 7C2, depth 49 ft.)
G-5	Airport monitoring well - upgradient. (State Well 3S/1E - 1P2, perforation depth 40 - 45 ft.).
G-6	Airport monitoring well - upgradient (State Well 3S/1E - 12D2, perforation depth 36-41 ft.)
G-7	WRP monitoring well - within irrigation area. (State Well 3S/1E - 12A2, depth 69 ft.)

G-8	WRP monitoring well - downgradient of irrigation area. (State well No. 3S/1E - 12G1, depth 75 ft.)
G-9	Background monitoring well - upgradient/stream. (State Well 3S/1E - 1R2 well depth 56 ft.)

Measurements may be coordinated with Zone 7 of the Alameda County Flood Control and Water Conservation District. A map showing the locations of these wells and copies of their boring logs shall be submitted with the first report. The producer shall be responsible for obtaining and reporting groundwater monitoring data and test results.

C. LAND OBSERVATIONS

Stations	Description
C-1 to C-'n'	Located along Arroyo Las Positas within the Las Positas Golf Course at road and walkway crossovers.
F-1 to F'n'	Located at a sufficient number of points at the user's irrigation areas in order to ensure compliance with wastewater reclamation requirements.

The producer shall be responsible for all C stations and shall submit a location map of these stations with the first report and annual reports thereafter. The user shall be responsible for all F stations and shall submit a location map of these stations with each report. (State Department of Transportation and August Hagemann are hereinaftger called the users).

II. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

A. The schedule of sampling, analysis and observations shall be that given in Table 1.

III. MODIFICATION OF PART A, DATED JANUARY 1978

Exclusions: C.3, C.4, C.5a, C.5c, C.5d, D.1, D.3, F.1 and F.3.e.

IV. MISCELLANEOUS REPORTING

A. The producer and user shall submit joint monthly reports by the 15th day of the following month.

B. The producer shall comply with all monitoring requirements for effluent, ground water and C land observation stations.

C. The user shall comply with all monitoring requirements for the F land observation stations and shall report the time, date and location of the user's violations and the corrective action taken. The user shall notify the producer of these violations when they occur.

D. The producer shall report:

1. the time, date, and location of the producer's violations,

2. the time and date wastewater service to the producer's or user's irrigation area was cut off because of violation, and when service was resumed, and

3. corrective action taken by the producer.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 85-46.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Effective Date_____

Attachments

Table I (2 pages)
Notes for Table I

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS ORDER NO. 85-46

Sampling Station	E-1R			All G Sta.	All C Sta.	All F Sta.							
TYPE OF SAMPLE	C-24	G	Cont	G	O	O							
(1) Flow Rate (mgd)			D										
BOD, 5-day, 20°C, or COD (mg/l & kg/day)	3/W												
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/l-hr. & cu. ft./day)													
Total Suspended Matter (mg/l & kg/day)	3/W												
Oil and Grease (mg/l & kg/day)													
Coliform (Total) (MPN/100 ml) per req't		3/W											
Fish Tox'y 96-hr. TL % Surv'l in undiluted waste													
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)		3/W		3M									
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Nephelometric Turbidity Units)		(2) E											
pH (units)													
Dissolved Oxygen (mg/l and % Saturation)		3/W											
Temperature (°C)													
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO<1.0 mg/l) Total & Dissolved (mg/l)		3/W											
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)													
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE I (continued)

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS ORDER No. 85-46

Sampling Station	E-1R			All G Sta.	All C Sta.	All F Sta.							
TYPE OF SAMPLE	C-24	G	Cont	G	O	O							
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)													
Phenolic Compounds (mg/l & kg/day)													
All Applicable (3) Standard Observations					W	W							
Bottom Sediment Analyses and Observations													
Total Ident. Chlor. Hydrocarbons (mg/l & kg/day)													
Total Dissolved Solids(4) (mg/l & lbs/day)		3/W		3M									
Chlorides (mg/l & lbs/day)				3M									
Full Ion Analysis (5) (mg/l)	3M			(6)									

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-intergrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
G = groundwaters stations

FREQUENCY OF SAMPLING

E = each day of use
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

FOOTNOTES TO TABLE I

1. Measure and record daily the volume of reclaimed wastewater used for irrigation of each designated use area.

2. Turbidity shall be measured on each day of use when spray irrigation of food crops which will not undergo extensive processing occurs, in compliance with A.5. of Order No.

   Standard Observations shall also include:

   (a) odors of waste origin observed beyond the limits of the irrigation area(s),

   (b) the nature, character and relative stength of any odors observed,

   (c) wind direction and velocity at the time of observation, and

   (d) whether or not surface runoff of wastes from the irrigation area(s), a description of the location, amount and corrective actions taken to eliminate any such runoff observed.

4. Total Dissolved Solids shall be measured and reported in units of mg/l and lbs/day.

5. The Full Ion Analysis shall include Calcium, Magnesium, Sodium, Potassium, Alkalinity, Sulphate, Chloride, Boron, Carbonate, and Bicarbonate. The need to continue this analysis will be determined by the Executive Officer upon request and upon full compliance with the mitigation plan (September 1, 1986).

6. The frequency of Full Ion Analysis shall be determined for ground water monitoring wells (all G Stations) as part of the mitigation plan. The number and locations of wells may be modified also.